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General Articles.

SAFEGUARDING LONDON'S MILK.

A NOTE ON MY EXPERIENCE IN ATTEMPTING TO SAFEGUARD THE LONDON MILK SUPPLY FROM CONTAMINATION WITH TUBERCULOUS BACILLI SINCE 1908; AND A RESUMÉ ON THE ERADICATION OF BOVINE TUBERCULOSIS.

BY Mr. A. DUFF DUNBAR, M.R.C.V.S., L.C.C.

Read at the meeting of the Central Veterinary Society, at Red Lion Square, London, W.C., on Thursday, May 5th, 1921.

This precis of over twelve years' practical experience and conclusions is culled from data, a crude extract of which I herewith introduce.

It is necessarily relative to the London milk supply (and it alone), as I have no conception of what obtains in any of the more important provincial towns. I shall confine these remarks to the initial five years (the "spade" or experimental stage), that is, from 1908 to 1913; since then the general combating which prevailed during that period has become less irksome. It was rather a formidable undertaking for one to tackle, and one could only hope to make a peripheral attempt at the work; the opposition encountered, however, in the early days gradually relaxed, and this state of affairs has continued, due, I think, to the beneficial results being evidenced and appreciated by those most directly interested. The reaction being marked, the effects accruing have been beyond the anticipations of my most sanguine moments. Farmers, dairymen, cowkeepers, managers of the various milk companies, etc., recognising that there "was something in it," now give every assistance, and are amenable to reasonable and practical suggestions, which is an incentive for the harmonious prosecution of the endeavour to eliminate the Bacillus tuberculosis from milk, if not the resultant disease. They are disappointed and annoyed when their attention is drawn to the fact that milk containing the bacillus had been supplied to the public from their premises for consumption. I cannot call to mind a single case in which the parties are not anxious to expedite the suppression of tubercle, to have healthy herds, and to supply a pure, clean milk where possible, which of course cannot materialise until sensible procedure is adopted. Had these people's minds not been corrupted and contaminated by hearing and reading matter, the emanations of fertile imaginings (and, I fear, "builders of bad theories") the task in those days would have been lightened; but it was no sinecure. The only assistance or encouragement one received was somewhat of a negative character, which I appreciated very much, from several of the County Medical Officers who did not know, and (what was of paramount importance) did not pretend to know, bovine tuberculosis. From the profession I regret to record I have received no assistance in any way whatever. It is the man who pretends or imagines he knows, and does not, that is the stumbling block in this or any venture. I have failed to find anything to plagiarise were I so disposed. I used to read a lot and hear much of matter bearing on this subject, but on analysis one found, and finds, the stereotyped utterings, generally, of the inexperienced, the faddist, the theorist, and the man with the opinion, etc., which hinders, rather than helps. I put it to those who may have to associate themselves in a practical manner (and hope there will be many) with this disease. Do not listen to the theorist. The good theorist, perhaps, may not be an unknown quantity, but is exceedingly problematic, I fear, and must be relegated to some other sphere of usefulness for his mental pabulum. At any rate, we are, or ought to be, finished with that ilk, the "race" is for the practical man.

Exempli gratia. The other day the newspapers stated that a factory is to be erected for the Pasteurisation, etc., of milk, at a cost of some £250,000, in London. What do the promoters think they are to accomplish, one wonders? Do they imagine that milk so treated in the ordinary way will destroy the bacillus of tuberculosis? The theorist is evidenced, I fear. If that sum was given to us, then I could understand the intention (*pro bono publico*) by instituting proceedings before the fact, not trying after. Similarly, I have read recently, more than once, quotations from different persons about the enormous amount of milk cows that would have to be killed, and the colossal amount of money involved, in mitigating only tuberculous disease, and thus seriously implicating the milk supply if such a drastic form of procedure was even attempted. Why suggest slaughtering the animals until they are ready? Even "open" cases need not be killed until they are in a condition for the butcher. Have not a very large number of animals to be killed daily and weekly for food? Surely this type of cattle would be suitable substitutes for young healthy females, who must be protected, absolutely isolated,

reared, and housed under perfect hygienic laws. This digressive preamble is, I think, fraught with importance, and is the crux of the position, for up to the moment there has been apathy, inaction, and talk (too much), which should be erased with the strongest diction. There may be in store some curative or prophylactic agents, but I think it meantime futile to refer to these, as there have been so many disappointments. The bacteriology is outside the scope of these remarks. I do not know the life history of the bacillus, nor anything of the origin of life, but one ought to bear in mind that the Bacillus tuberculosis is not indigenous to these islands; it does not take kindly to cleanliness or sunshine, but seems to court darkness and insanitary conditions. It has been found under the former up to four months, and the latter over twelve. One does get familiar with the resultant ravages, once the causal organism gains access to a suitable host, and can note the pathological changes in the economy when given the two conditions, predisposing or contributory (the lowering of vitality) and the exciting germ B. tuberculosis—cause and effect.

Prevalent Fallacies.

En passant, is any one that is in constant association with this work surprised that sanatoria have not been the success expected. The sites generally chosen negative that, as far as my experience supports the view of so-called open-air treatment. Elemental exposure contributes to, rather than retards the progress of the disease. In the area included in my itinerary, which embraces some thirty-four counties in England, one has unique opportunities of surveying the physical aspects, and one finds the geological features unimportant, but the regions of irregular contour with exposure are conditions to be reckoned with. The fallacy, quite prevalent, that animals kept in confinement (housed) are more liable to contract and suffer from tubercle (ordinary sanitation observed) than those which practically live an outdoor life in this country, must be expunged. The farmer, for instance, invariably states that his animals must be healthy, living out of doors; yes, healthier looking, like the man who leads an outdoor life, having a more vigorous appearance, but only in appearance. They had difficulty in believing, that although the animals looked well and healthy, from their point of view, physically, a higher rate of advanced disease was found, other things being equal.

I am not touching on the properties or quality of milk, vitamines and other essentials.

In the autumn of 1908 I entered on my present billet to carry out the provisions of the L.C.C. (Tuberculosis in Milk) Act. Having arrived at certain conclusions years before, it was rather a "spoke" in the campaign, when tuberculosis of the udder only was recognised and considered. When general tubercle was approached I found that farmers and others got to know, through channels obviously opposed to my views (and the agency of the profession was not wanting), that the powers given by the Act began and ended with tuberculous udders. I saw that "things" would have to be manipulated or the whole work would be farcical, as I knew then that lesions of tubercle in the mammary gland are not the only factors necessary to find the bacilli in milk. I think it not out of place to remark here, on this point, and bearing on diagnosis, that too much attention need not be directed to the appearance and condition of the udder in arriving at a conclusion, as tuberculous bacilli are found in the milk before the udder becomes affected (if ever); how long I cannot state, but certainly some months. Of course, many cows will, and do, become tuberculous wrecks, and the udder remains throughout absolutely free from this disease, and the bacilli are excreted by way of the teats. Many a "direct" sample has shown this. I may again remark, that there is no "best time" during milking for taking a reliable sample. I mention this, as I have an idea that it is or was a controversial point. When the udder is the seat of disease only, as many as five samples may have to be taken at different times before the bacilli can be found in the milk (irregular emission). These remarks also apply to generalised disease. Both conditions co-existing, the results are much "more happy." These are not the findings or conclusions from a few selected and controlled subjects, but from very many animals, living under normal life conditions.

Let me direct attention to a rather interesting feature (a field for the theorist)—the question as to how the udder becomes the seat of disease, and the animal otherwise remaining practically healthy, as revealed on post-mortem examination of the cadaver. One finds the minimum of microscopic evidence, perhaps a few isolated nidi in the lymphatic system after careful search. Unless one has had experience in P.M. work, recent tubercular infarcts in the udder are extremely difficult to detect (an extensively-diseased organ is a different matter). This also applies to the palpation of the gland for diagnostic purposes when the infective results are exceedingly minute (sometimes not larger than, say, a monkey nut), and extreme care must be exercised. Again, any part or region may be involved, no specific area being selected by the bacillus for its ravages. Induration or enlargement of any part of the udder is not necessarily tuberculous, although a positive result be revealed from a milk sample. The supramammary gland conveys nothing as an aid to diagnosis. These are not a clinical entity. It is possible, but the quantity is negligible, to find the bacillus in the milk through the agency of infected fæces falling into the bucket during milking; but when a sample is taken direct from a teat or teats, it is utterly impossible for any extraneous matter to gain access to the vessel; this point is emphasised, as I am not sure that it

has not gained currency that tubercle bacilli found in milk when the udder is perfectly normal come from the manure and not direct through the teats (which is another fallacy).

The principle which had to be adopted, bearing on the Act, did not favourably impress me, entailing a month's delay for the examination of the milk; samples of which are and were taken at the various railway stations in and around London from churns consigned from the country, and possibly another week might elapse before one was enabled to overtake the work.

These samples (positive) may have come from anywhere in England, from a farmer or dairy company; the latter may be receiving milk from anything up to four or five hundred farms: the task was to find the offending centre. Of necessity many mistakes were made (more intentional than real) as one was out to reduce tuberculosis generally, endeavouring to establish a purer, if not a cleaner milk supply, but no farmer suffered any financial loss through my agency, I think. A sample or samples were taken direct from each suspected cow (to save controversy), and the milk examined by an independent authority, thus verifying diagnosis. The result of these five years I shall give in short:—

Number of farms visited, 2,364.

Number of cows examined, 66,774.

Number of cows with tuberculous udders, 763.

Also number of tuberculous cows with advanced disease, 2,223, and 3,360 of recent infection. These figures have not been shown before or entered in official reports, as the Act permitted action on the udder only.

London's Healthy Cow Population.

At the present time there are some 2,000 cows in London cowsheds, and there has not been a tuberculous milk-cow for the past five years. One does not know the moment when one may be introduced (so long as diseased animals are allowed to exist in country districts), and care is exercised to cope with such.

These are my authority for the deductions I am portraying. When a tuberculous milk cow is detected, the milk is immediately stopped for consumption, the animal put "dry" as soon as possible and prepared for slaughter, the milk in the interval, if to be used, is brought to the boiling point, and given to calves or pigs with impunity. I think the menace of tuberculous meat much and unduly magnified, but that is not my theme.

Now, if the efforts of one can accomplish this much, when considerable opposition existed, what could be overtaken by a combined action under the favourable auspices now prevailing?

How have these results been attained? Simply by hard work and recognising the most important factors of the disease, *infectious* and *preventable*, and acting in accordance therewith. Have we not cause to blush? What has been done in the army relative to, say, glanders, by, I would infer, appreciating the meaning and the practical interpretation of these two words? The circumstances may not be quite analogous. The R.A.V.C. may not be trammelled by spurious enactments. Who advises the Government on such matters? One wonders.

It ought to be made a penal offence to kill healthy cow calves, under any pretext, for at least the next five years. *Twenty years ago I came to the conclusion that Britain could be freed from bovine tuberculosis in five years (and have frequently repeated it since), and the experience from then until now fully supports that conclusion.* I am quite cognisant of the importance of that statement, and take full responsibility for it; and further, *ipso facto, there should not be any milk containing T.b. in a few months.* It is enunciated that tuberculous lesions of the bovine type in children are as high as 80 per cent. of tuberculous cases; bovine infection, therefore, cannot be denied, or thought in any way imaginary, and a clamant necessity is imminent for establishing an internecine campaign on the causal agent, and thus ensure the country's pure milk supply. It is undoubtedly a public scandal, and is proclaimed with no uncertain voice. Our confreres in America are making rapid strides, showing the "Old Country" what can be done, being untrammelled; here we stagnate. The National Clean Milk Society are doing considerable work of a propagandist nature with marked success. A clean milk (low bacterial content) can be produced by simple methods of detail, without any elaborate or expensive equipment from any cowshed (irrespective of its sanitary condition) at any time; and although the Society cannot be supposed or expected to enter the regime of tuberculous milk, the general principles are identical.

One's mind flashes to certain buildings, to make which habitable (not to say sanitary) for milk-cows would mean a huge undertaking; still, by doing a little pegging away (and doing that little long) it is astonishing what can be accomplished in, say, twelve months, and by the time I have mentioned (five years) the buildings and surroundings, with superlatively strict attention to minutiæ of cleanliness (no harassing or absurd strictures nor expensive appliances), a clean and pure milk supply would become automatically an accomplished fact, conserving the health of the animals and encouraging the milk yield—two important factors.

Now what position has the veterinary profession (or the medical) taken regarding the clean milk question? A homily is not my prerogative, but this is a matter, amongst others, of vital moment. Surely the cows' milk product is (if anything is) within our sphere. Inertia is obvious, there is little evidence of suggestion to cope with the new conditions even. Are the schools appreciating the perspective? Is the British practitioner ever consulted about milk, or what pertains thereto?

Why not? Because it is generally accepted that he does not study the subject.

Tuberculosis Eradication.

Allied to the milk question is the base membrane; a subtle, insidious, infectious, contagious, incurable (up to the moment), preventable disease, difficult to diagnose in the initial stage, caused by the Bacillus tuberculosis, occasioned and concomitant with a lowering of vitality, "bad health." An animal may be infected at any time, and never develop the disease. The incidence need not be referred to, further than that it affects animals of all ages; quite as many heifers as aged cows succumb to the complaint. I am as yet uncertain, under favourable circumstances, how long it is, or what is the shortest period, from the commencement of the disease (not infection) until the bacilli can be found in the milk. I state it guardedly, as thirteen months—it may be a little less.

It is surprising how rapidly a cow will become fat, after the milk flow has ceased, provided the disease has not become too advanced. The signs of tuberculosis are entirely negative in the early stage, in fact all the appearances of perfect health are manifest. Age, condition (fat or thin), "heavy or light" milkers, convey nothing.

The owners, who accepted and acted on instructions imparted (not in perfect detail to the letter, but in the spirit), found that they could generally keep their milk supply "fairly" free from T. b., by watching and being ready to cope with any untoward feature, such as an animal living under perfectly ordinary and normal conditions and with no apparent cause becoming suddenly fat, or thin, increase of milk from one or more quarters (that depending on what part of the udder is stimulated by the foreign body "bac") or a "hardening" in any part, with no pain whatever (at this point, of course, the disease has existed for some considerable time), and more or less circumscribed or abnormal appearance.

The owners take steps to remove the cow, or cows, from the herd, and generally prepare for slaughter.

What milk the cow may be yielding is brought to boiling point, and given to calves or pigs with impunity, as already stated. When Pasteurisation was foolishly rampant, and when the milk was "nicely warmed" (hot milk) and then consumed by the young with avidity, disastrous results followed—fœtid diarrhœa and collapse, and if overcome (which is rare if that poison be still given) generalised tuberculosis at an early age. I have witnessed many many such.

"Nicely warmed" milk is an excellent media for growing on a large scale the various bacteria; raising the temperature, or not cooling milk properly and keeping it cool, quickly converts a normal milk of a low bacterial count into a liquid commodity rivalling sewage; it may look more palatable, but not less noxious.

Can any one be surprised at the enormous amount of so-called summer diarrhœa and anæmia in the young, when this lethal product is regularly consumed?

Now, what is required to overcome such a state of affairs and protect children and a gullible people from artificial pretensions? The services of the practitioner must be enlisted (the Inspector I consider contra-indicated)—the men of integrity, acumen and ability, who understand their clients, have reciprocal confidence, and know their stock, so that every bovine animal would be under observation, and the removal of the suspicious animal before (not after) the excretion of bacilli occurs; the benefit of any doubt opposed to the animal. In this way the tuberculous animal, after some little time, can then be sold and slaughtered to advantage, with practically no loss as compared with the healthy. The other factor of the position, *compensation*, under this scheme of eradicating tuberculosis, should not be entertained or considered for a moment when the animals can be fattened (or are fat) and sold in the ordinary way. The wasters are wasters, and in any case must finish in the usual place.

Putting the Cow House in Order.

I think it in order to make a few remarks on architecture (which has always been at fault), if an attempt may be made to rearrange or remodel existing buildings. High and lofty housings, so-called "roomy" sheds, are anathema. We hear of a cubic air space index—where and how certain figures are found or arrived at, and from what authority or source, I cannot imagine—but they are often amazing; to wit, the numbers of tuberculous cattle in Britain, and the almost impossible amount of money that would be involved in combating this disease. From a health standpoint, the buildings or sheds ought to be low-roofed, well-ventilated (the difference of draughts and ventilation understood), maximum of window light, surface drains or channels, floors and walls up to say 5 feet, made or coated with impervious material; the whole to conserve warmth, and provide the utmost comfort and cleanliness with the minimum of labour. Young stock should be in separate buildings entirely, a thing apart, and in absolutely hygienic surroundings. It cannot be expected, however, that landed proprietors or farm owners will give financial assistance in refashioning the cowsheds—land being so excessively burdened already—but where help is required, and the farmer not inclined to make a temporary monetary sacrifice, help might be given with advantage, for the ultimate benefit would be reaped by him, the stock owner and the public conjointly. The Exchequer ought to advance the money where required, at a low rate, if any, of interest, which would overcome any excuse for lack of funds. I am quite conscious of the itch and desire seemingly to spend public money

at present, and if we can be instrumental in diverting a very little to a proper channel it would be a consummation. Rural District Councils and allied bodies should be empowered to engage the services of the practitioners in their area. County Councils may have an over-riding control, but are too unwieldy. Let the machinery be as simple as possible, no absurd or arduous regulations, or coercive measures (and the "mud slinger" who is found in every sphere of life and circle of society must be dispensed with, we have no room for him), when the maximum of success with the minimum of expense is a *sine qua non*. Should the power be granted, there ought not to be one drop of tuberculous milk in England, in say three to six months, nor a tuberculous animal in five years. A special clause might be necessary for the higher valued, or pedigree stock, and the time somewhat extended, but they in course must bow to the inevitable. And so we put our house in order. But we must not be hampered with an obsolete bill nor untrained men. Retrospectively, what has been done since Koch's discovery, some forty years ago? A seeming travesty on his efforts. I fear I can say very little regarding diagnosis, but with properly trained assistance, able to diagnose clinical tuberculosis in milch stock, the disease can be controlled in a comparatively short time by not chasing the "old wake." We have under review a subtle, preventable disease, which by the exercise of persistent persecution with a maximum of co-operation, can be exorcised from this country. These are my premises and conclusions which I have the privilege to portray.

I have the temerity to appeal to you, Sir, to assist, by your good offices, to approach the Government to establish an Order on the context of these; and if I cannot get our integral body at my back, or follow my hegemony, I crave for the support of this important unit of the profession to associate itself with me as pioneers, and help to remove all fictitious and hampering barriers, so that we may show that we are something more than pigmies in the world of science. We have laboured under the odour and stigma of subordinates far too long, and I ask your unanimous mandate to further the purport of what I have had pleasure in inditing. And move accordingly.

[A full report of the discussion on this paper will be found in the account of the meeting published under the Association Reports section.]

Veterinary Science.

The following letter, in reply to Lord Willoughby de Broke's communication to *The Times*, was sent to that journal by Major Ascott, Bideford:—

To the Editor of "The Times."

Sir,—Although it is probable that some more able pen than mine will reply to the statements and criticisms on the above subject in your article and by Lord Willoughby de Broke in your issue of to-day, as a country practitioner I should like to express my views also.

It is, I think, misleading to compare our numbers per head of population with the countries you mention. It would, I think, be fairer to take the agricultural population as a basis, and if this be done, it would be found that the figures are not so much to our disadvantage, especially if note be taken of the output from our colonial schools.

It is a small matter, but may I correct the very common mistake of confusing the R.V.C. with the R.C.V.S.? The R.C.V. is only one of several schools—there are others at Edinburgh, Glasgow, Liverpool and Dublin—where students are prepared for admission to the profession after passing an examination conducted by examiners appointed by the Royal College of Veterinary Surgeons, which body, as you say, has a monoply in the granting of licences to practise.

You say "that in consequence there is a low standard of attainment." If this be so, it is remarkable that this one portal system should have produced a body of men which enabled our Army Veterinary Department to compare very favourably with that of any other country engaged in the late war. This is only one instance; many others could be quoted to help refute the statement. You say further that (also in consequence) there is "a limited output of registered practitioners and a large body of unregistered men." This is not only ambiguous, but also contradictory. The use of the word limited may be held to imply that the numbers are limited purposely, which is quite untrue, and the unregistered men are, or have been, debarred from obtaining the diploma because there were no vacancies, whereas the majority of these men are those who have failed in the examination which it is implied is of a very low standard.

I disagree with Lord Willoughby de Broke when he charges the Council of the R.C.V.S. with being against progress, and I do not think the profession generally is dissatisfied with the Council as a whole. We have the opportunity of voting yearly on its policy, and it is a healthy sign when, as is now the case, there is a lot of criticism in the intervals between the elections. It is recognised in every sphere that a strong opposition and a lively criticism is essential to good government, so why not in veterinary politics?

I also disagree with his Lordship when he says that "amongst the unregistered, men may be found some of the best practical men in the country, with whose services the country could not at the present time dispense." This assertion surprises me, as I have no knowledge of any such men in the West of England, and I protest most strongly against any recognition being accorded such unregistered men as I have met. No Act or Charter will ever prevent quackery in the treatment of lower animals. It has failed to do so, even in the treatment of the higher animal—man, in spite of the additional protection afforded by the

necessity for death certificates or coroners' inquests. I am sure the Council and the profession generally are anxious to move with the times, and to raise the standard whenever possible, but admitting a batch of quacks is surely a curious way of doing it.

Considering the extremely small amount of outside financial help veterinary education has received in the past, it is a matter for congratulation that the profession has made for itself the position it has, and there is now every indication that the near future will see considerable progress, but I think the profession will consider any interference with the one portal system a retrograde step and resist any such attempt.

I am, Sir,
Your obedient servant,
WM. ASCOTT, M.R.C.V.S.,
Major, R.A.V.C., T.F., O.B.E.

Bideford,
16th May, 1921.

THE TOWN HORSE TRADE.

The London cart horse parade, which always brings together the pick of the heavy horses in London, was even more a success this year than hitherto. While most of the heavy horses bred in this country are used in agriculture, the London market still affords a valuable outlet for well-bred "heavies." This being the case, we are inclined to think that the parade does not receive so much support as it deserves. The recent appreciable decline in the price of food consumed by the horse, as compared with the almost stationary rates of petrol and oil, has no doubt deterred contractors and others from purchasing motor vehicles; and the number of exhibits at Regent's Park on Monday shows how important a position the heavy horse occupies for draught purposes in the town. The general condition of the 744 entries was excellent, and it is significant that not one was rejected by the veterinary surgeons; a performance which speaks well for the work accomplished by the Cart Horse Parade Society. Although most of the animals were admirably suited for heavy transport work, one could not help noticing a large proportion showed a deficiency in bone, a matter which needs careful attention. Shires always find favour with the London contractor; but we should like to see not only the Shire Horse Society, but also the Suffolk and Percheron Societies, give more attention to the town horse trade. After all, we breed more animals in this country than agriculture could possible absorb.—*Agricultural Gazette.*

Camden Summer Term Fever.

Back again into work! Doesn't the front quadrangle of the college look nice now, especially with the tulips, papaveraceæ and things all "agrowing and ablowing." In fact, the lawn would be an ideal place to laze on if those Class "D" students would give up the practice of leading dogs about that have just previously had a large dose of tenaline.

But how about working these light evenings? You start off something like this:—

The animal parasites are divided into protozoa and arthropoda. (Hulloa—who is that idiot whistling outside?) You go to the window:—"No, I am not coming up to the nets." The animal parasites are divided:—(Well. what is it, Bill? What's that! Regent's Park—and I presenting myself in July!) The animal parasites are divided into protozoa, Regent's Park and cricket practice. (Then you give it up and go to the "Bedford.")

The Veterinary Record.
4th June, 1921.

VETERINARY RESEARCH.

Of whatever nature the ultimate recommendations of the Advisory Committee of the Development Commission may be, it is to be hoped that a formula will be arrived at which shall fulfil the requirements of the veterinary profession and of the stock-owning members of the British public. Too often has the veterinary profession been accused of indifference to the need of stock-owners in this respect. Too often has the inadequacy of research institutions and of research workers been discussed by the layman, always with a view to enlarging upon the supposed delinquencies of the profession in this country. The fault has not been that of the profession. Veterinary research has been "nobody's child." Sufficient money has not been forthcoming, either for the purpose of carrying out research work of imperative necessity to stockowners in a country which justly boasts of the possession of stock which is second to none, or for the post graduate training of men who *à priori* are best fitted to undertake such work.

The committee is "to report on the facilities now available for the scientific study of the diseases of animals, to indicate what extension of those facilities is desirable in the immediate future in order to advance the study of disease (whether in animals or man), and to advise as to the steps which should be taken to secure the aid of competent scientific workers in investigating diseases in animals."

That the existing facilities are deplorably inadequate is evident to all who possess a knowledge of immediate requirements in this direction.

Greater facilities are urgently necessary for the furtherance of research in all branches of veterinary science.

The day of the individual research worker has passed and the imperative necessity for "team" work is an outstanding feature of modern investigation. For example, the bacteriologist requires the close co-operation of the bio-chemist, perhaps of the parasitologist, and certainly of the immunologist and of the "field worker," the clinician.

It would appear that the most economical method of really helping veterinary research would be to make use of existing institutions

which already possess the staff necessary for this team work. At the same time it is a *sine qua non* that the actual line of investigation should be determined by and under the complete control of a veterinary director, who must be a veterinary surgeon, experienced in the methods of investigating animal diseases, and at the same time possessing an intimate knowledge of the conditions governing the occurrence and spread of diseased conditions in the lower animals.

Such men are available.

Further, it is essential that facilities in the form of substantial scholarships should be provided for the post-graduate training of veterinary surgeons in the methods of conducting such investigations, and this training must not be limited to any one branch of research.

DANGEROUS DRUGS ACT, 1920.

The regulations made by the Secretary of State under the above Act have been published and come into force on the first day of September.

They differ slightly from the draft regulations published in January, which led to so much discussion in the medical, dental, veterinary, and pharmaceutical press.

The right of the veterinary surgeon to prescribe is now recognised, but he must endorse the prescription, "For animal treatment only," and the prescription must be written on an official form. But in times of emergency the prescription may be given without using this form, and in that case it must be endorsed "Official form not available." The experience of dispensers in the past shows that this proviso will prove to be very popular.

Under section 7, clause 17, we read as follows:—These regulations shall not apply in respect of the preparations named in schedule 2 to these regulations, nor to any of the drugs when denatured in a manner approved by the Secretary of State. The only two preparations exempted by the first part of this clause which are of interest to veterinary surgeons and stock owners are liniment of opium and Dover's powder. Farmers will be able to administer opium to their stock in the form of the liniment instead of the tincture without hindrance from these regulations.

The second part of this clause raises a very knotty point, "How to denature a poison?" At first glance this appears to be an unsolvable problem, but perhaps the careful perusal of the Departmental Committee's report on the draft regulations, which has not yet come under our notice, will indicate how this can be carried out.

Abstracts and Reviews.

Ætiology of Rickets.

The Ætiology of Rickets—An Experimental Investigation.

This is severe criticism of the work of Mellanby, on which is based the conclusion of the Accessory Food Factors Committee of the Medical Research Council that rickets is a deficiency disease due to a lack of an anti-rachitic factor associated with milk-fat.

The present experiments deal with five litters of pups. The results are set out fully and are convincing.

The authors' own conclusions may be given:—

(1) In young dogs under ordinary laboratory conditions a liberal allowance of milk-fat, up to even 14 gm. per kilo. of body-weight, neither prevents the onset of rickets nor cures it when it has developed.

(2) Pups kept largely in the open-air may escape the development of rickets on an intake of less than 1 gm. of milk-fat per kilo. of body-weight.

(3) With scrupulous care as to cleanliness it is, at least sometimes, possible to rear pups free of rickets in the laboratory on an intake of only about 0·5 gm. of milk-fat per kilo. of body-weight, along with bread, provided that the diet affords an adequate supply of energy.

(4) The energy value of the diet, however, supplied, quite apart from the presence of any hypothetical anti-rachitic factor in milk-fat, would seem to play a part in controlling the development of rickets, but that it is only a contributory part is shown by the development of rickets in pups with a high energy intake if confined in the laboratory without scrupulous care as to cleanliness.

(5) Milk-fat may be reduced to about 0·3 gm. per kilo. of body-weight, if its place is taken by an equal amount of lard, without the onset of rickets.

(6) The results of these observations do not support the conclusion of the Accessory Food Factors Committee of the Medical Research Council that rickets is a deficiency disease due to a lack of an anti-rachitic factor associated with milk-fat. H. E. H.

[By D. Noel Paton and A. Watson, *Brit. Jnl. of Exp. Pathology*, 1921, Vol. II., No. 2.]

Efficiency of the Milk Cow as Food.

In an official report on the food supply of the United Kingdom it is estimated that to produce 100 calories of human food in the form of milk from a good cow required animal food of 2.9 pounds starch equivalent; 100 calories of milk from a poor cow is estimated to require the consumption of 4.7 pounds; while to produce 100 calories of beef from a steer 2½ years old it is estimated that 9 pounds of starch equivalent in feed are required.

Stated in terms comparable with those used by Dr. Armsby, this would mean that the good milk cow returns 20 per cent. of the energy value of what she consumes, the poor milk cow 12 per cent., and the good beef steer only 6 per cent. Although this estimate is more favourable to the beef steer than is that of Dr. Armsby, yet even in this estimate it will be seen that the poor cow is twice as efficient and the good milk cow more than three times as efficient as the beef steer in the conservation of energy in the food supply.

Considering the whole length of life of the animal, Prof. Wood, the leading English agricultural expert, estimates that the cow returns in milk, veal, and beef one-twelfth as much food as she has consumed, while the beef steer returns only one sixty-fourth. In other words, the cow is five times as efficient as the beef steer as a food producer when the whole life cycle of the animal is considered. Similarly it has been estimated by Cooper and Spillman that the crops grown on a given area may be expected to yield from four to five times as much protein and energy for human consumption when fed to dairy cows as when used for beef production. As Wood has very strikingly shown, the longer the time that the beef animals are fattened on grain the less economical the process becomes.

Quite recently Dr. Armsby has pointed out that " the dairy cow shows the highest efficiency of any domestic animal, both as regards conversion of food and availability of the product for man."

Not only is the milk cow several times more efficient than the beef steer in the conservation of proteins, fats, and carbohydrates for human consumption, but in the gathering and preparation of mineral elements and vitamines she contrasts even more favourably with the beef animal. It is largely because of its richness in calcium and in fat-soluble vitamine that milk is the most efficient nutritional supplement to bread or other grain products.

Meat is strikingly poor in calcium, and does relatively little to balance a diet consisting largely of bread or of other products of seeds. It does, of course, supplement the protein, but American dietaries would nearly always be adequate as regards protein even without the meat that they contain. On the other hand, dietaries containing little or no milk are very apt to be inadequate as regards calcium. Detailed analysis of the results of hundreds of American dietary studies shows that in practice the adequacy of the calcium intake depends more largely on the sufficiency of milk supply than upon any other factor.

The vitamines furnished by hay and grains, and thus consumed by cattle, are stored in the animals' tissues to only a limited extent, but they are transferred in relative abundance to the milk. Hence the vitamines of the coarse material of grain not directly available as human food are brought into form for man's use very efficiently through milk production and very inefficiently through the production of meat.

Thus, the result of recent studies in nutrition, which have made clearer the importance of the mineral elements and vitamines, is to emphasize strongly the great desirability of a more abundant milk supply, even if this should somewhat reduce the production and consumption of meat. Our present knowledge of nutrition justifies more fully than ever before the statement that " the dietary should be built around bread and milk," bread or other grain products being the foods which furnish the most nutriment for their cost (whether in money or in land and labour), and milk being by far the most efficient nutritional supplement to bread or other grain products. Therefore, somewhat more of our grain crops than is the case at present should come directly into human consumption to augment the bread supply ; and of the grain fed to cattle more should be used for the production of milk and less for the production of meat.

In general, ten pounds of grain may be expected to produce not over one pound of meat or about three quarts of milk. If the three quarts of milk cost the consumer more (because of greater labour cost in production), they are also certainly worth more to him. In so far as things as different in their nutritional properties as meat and milk can be compared, it is fair to say that one quart of milk is at least as great an asset in the family dietary as is one pound of meat. The per capita consumption of meat in the United States is so high that it might be reduced by one-third or even one-half with little or no nutritional loss, while a corresponding increase in milk consumption would certainly constitute a great improvement in the average American dietary. We are confident that a moderate shifting of emphasis from meat to milk will help in the normal evolution in the diet in the conservation of proteins, fats and carbohydrates, and in the gathering and preparation of mineral elements and vitamines.

The following is contained in the report of the committee : It has long been known, but perhaps never sufficiently emphasized, that the milk cow returns in the human food which she yields a much larger share of the protein and energy of the food she consumes than does the beef animal. Dr. Armsby, probably the leading expert of this country on animal nutrition, has estimated that of the energy of grain used in feeding the animal there is recovered for human consumption about 18 per cent. in milk and only about 3½ per cent. in beef.

[Public Health Reports (U.S.) 35 (1920) No. 17, pp. 994-996.— *Veterinary Medicine*, May, 1921.]

Town and Country Practice Contrasted.

The city practitioner, no matter how capable, who might be suddenly thrown into a mixed country practice, would find to his surprise and discomfiture that his work had not required him to accumulate as broad and diversified a knowledge of veterinary science as his country confrère. He would find that his field of work and observation had been very limited indeed.

The city veterinarian, figuratively speaking, can count the diseases he treats on the ten fingers of his hands, while the country brother would need all the hairs of his head to count them. The one treats horses and dogs, and the other all of the domestic species. The one chiefly treats mature animals, usually of middle age and under care and management that is fairly uniform, while the other meets all ages, housed, handled and fed under a variety of conditions too numerous to mention. To the one the diseases of the generative tract, of pregnancy, of parturition and of the young animal are things but vaguely recalled as having been heard in the lecture room, while to the other these are problems of great moment included in the daily grind and demanding a wealth of detailed knowledge, experience and skill.

The Country Practitioner.

In the large cities there are no scourges of great concern to the live-stock industry, while any day in the country an incompetent veterinarian might overlook a contagious disease that is capable of creating havoc in the community and even become a national calamity. Parasitism, so important to the live-stock interests, does not worry the urbanist, while, on the other hand, it continually puts the ruralist to the supreme test.

In surgery the contrast is quite as striking. Castrations of all the different species, hernias, cryptorchidism, obstetrics, impotence, sterility, mammary and teat affections, navel ill, deformations of the young, shoulder injuries of the young work horse, shoulder slip, bloat and impactions of ruminants, traumatic indigestion, wire cuts, fistula of the withers, poll evil, aberrations of the deciduous dentition, etc., are by no means all of the many conditions which, with few exceptions, do not concern the city practitioner. His country brother, however, who could not acquit himself skilfully in handling all of these would be a pronounced failure. And to this must be added the ability to properly restrain for surgery all the different species of all sizes and ages. The skilful handling of everything from a suckling pig to a monstrous stallion or dangerous bull is no trivial accomplishment, and yet most country practitioners do just these things every day without a hesitating movement.

Feeds and Feeding.

It is, however, in the matter of food hygiene that the greatest differences are met. The city horse is fed upon an inspected grain and hay ration. For the most part the feed consists of oats, timothy or prairie hay and water. Corn and commercial mixtures are sometimes substitutes when oats is thought to be too high in price. It is thus apparent that feeding the city horse is a simple matter. Note the difference in the rural districts. There is the blue grass pasture, the red clover and alsike pasture, the alfalfa pasture and the stalk field, any of which may run into low-lying slough lands, and in many instances there are brush and weed which if not actually poisonous are very frequently harmful.

In the city the water supply is always wholesome and of a temperature that varies but little, and that gradual. In the country the water is too warm in summer and entirely too cold in winter, where especial provisions are not made to correct this evil; not infrequently it is none too plentiful.

In the matter of roughage the country animal eats the hay that would not grade high enough to sell on the hay market, shredded corn stover that is often mouldy, weedy oats, straw and woody grades of alfalfa that has been badly cured. Corn on the cob is often mouldy and oats light and chaffy. Corn and cob meal or mixed chop feeds ground at the custom mill or at the farm are often found heated on account of immediate storage in too large a bulk, and bran, middlings, oil meals, and other purchased feeds are often allowed to spoil on account of poor storage accommodations. This variety of harmful influences to live-stock, all of which tax the wits of the country veterinarian, are not found in a purely city practice.

After giving representative lists of cases met with in city and country practices respectively, the authors conclude: These cases we believe to be sufficient evidence that a country practice is a kaleidoscopic enterprise compared with the cases in a city practice occurring consecutively during a period selected at random from records.

If space would permit extending these lists into the hundreds, the difference we are trying to illustrate would widen. It would show that the realm of the country practitioner extends into almost unlimited fields that are undeveloped because the curricula of the colleges have only begun to cultivate them. The practitioners of to-day, especially the older ones, were taught the infirmities of the horse. The remainder, which now constitutes the major part of veterinary work in the country, was left to the practitioner's own resources, and the way he has adapted himself to meet the growing needs in so many directions is extremely creditable.

[*Vet. Med.*, Chicago, May, 1921.]

Clinical and Case Reports.

Œsophageal Rupture in a Dog.

By Capt. T. Fenn-Addison, M.R.C.V.S., Gloucester.

Subject.—A two-year-old mongrel collie.

History.—Had been ill for five days and been dosed by a local chemist. When I was called in I found dog in a moribund condition, and in great pain. Manipulation of abdomen caused violent straining and cries. Owner said dog had showed signs of distress after a meal of bones; but soon seemed easier and took milk freely for several days. Examination per rectum revealed nothing. I did not attempt to pass probang, as there had been no sign of choking, and the dog was too far gone.

Owner begged me to try and save dog; but I told him he had called me in too late. However, I gave it a warm enema and a strong dose of chloral, and advised hot fomentations to abdomen. I saw dog again in four hours. Much worse, so destroyed it.

Post-mortem revealed traumatic pleurisy and pericarditis. The thoracic cavity was three parts full of liquid ingesta, which had escaped through a small rupture of the œsophagus due to impaction of a whole cervical vertebra of a sheep.

The pericardium was much infiltrated and inflamed, and the heart greatly enlarged.

Removal of Cyst.

By W. F. Widden, M.R.C.V.S., London.

Operation.—Removal of old cyst on head of cat.

This is interesting only because of the unexpected ease with which operation was performed.

Cyst between ears was the size of walnut. Owner very much wished operation to be pefformed at home, and I agreed to attempt it.

Cat was seated on its usual cushion with small blanket over back.

Four injections of codrenine were made round base of cyst. Five minutes afterwards cyst was opened. Cyst contained serous fluid. Remainder of codrenine, 0.5cc., was put into cavity.

Five minutes later three sutures were passed through skin at base of cyst. Cyst was then removed, and sutures tied.

The cat was not restrained in any way and remained seated during whole time. There was no bleeding, and healing was uneventful.

Association Reports.

Central Veterinary Society.

A meeting of the Central Veterinary Society was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C., on Thursday, May 5th, 1921. Major-General Sir Layton J. Blenkinsop, K.C.B., D.S.O., President, was in the chair. The following Fellows signed the attendance book :—Messrs. G. H. Livesey, J. B. Buxton, A. E. Willett, W. N. Thompson, H. King, H. D. Jones, J. W. McIntosh, J. Willett, S. H. Slocock, R. Bryden, W. R. Davis, H. R. Allen, P. McCunn, H. Cooper, J. F. Macdonald, O. S. Broadhurst, W. F. Widden, T. J. Bosworth, R. A. Philp, W. S. King, Col. A. Olver, Major P. J. Simpson, D.S.O., and P. W. Dayer Smith, Professors G. H. Wooldridge, E. B. Reynolds, J. T. Edwards, and Hugh A. MacCormack, Hon. Secretary. *Visitors* :—Messrs. A. Duff Dunbar, W. F. Wright and S. C. J. Bennett.

The minutes of the meetings of March 3rd and April 7th last, which had already been published, were taken as read and confirmed.

Correspondence.

The Secretary announced that the following gentlemen had written, regretting their inability to attend the meeting :—Mr. J. C. Coleman (Swindon), Veterinary Captain S. Rees Mogg, Major W. S. Mulvey (Chelmsford), Major G. W. Dunkin (Canterbury), Messrs. D. Reid Chalmers (Tunbridge Wells), and W. Perryman (London).

The Secretary said the following letter had been received from Mr. Frederick Bullock, Secretary of the Royal College of Veterinary Surgeons, dated 19th April, 1921 :—

> Dear Sir,—I am directed by the Council to acknowledge with thanks receipt of your three letters of March 11th, together with the accompanying resolution passed by the Central Veterinary Society. Later on in the proceedings of the Council the report of the special committee with regard to the qualification of examiners was adopted, and the matter was referred to the Parliamentary Committee.
>
> At the special meeting of Council which followed, it was resolved to adopt the revised list of preliminary educational examinations, and this decision was confirmed at a subsequent special meeting of Council on the 19th inst.—Yours faithfully, Fred Bullock, *Secretary.*

A letter had also been received from Mr. Harvey, to whom the Society had awarded its Victory Gold Medal for 1920, in which he expressed his most grateful thanks for the honour which had been conferred upon him.

The Secretary reminded the members that at the last meeting the resignation of Mr. Broad had been announced, and, as then authorised, he had written to that gentleman, and had received the following reply : "I am much obliged to you for your letter. It was with great regret I tendered my resignation, but at present I find I cannot get away to attend the Society's meetings, so I am afraid I must let my resignation stand."

The President said the only thing to be done was to accept the resignation with regret.

Morbid Specimen.

Mr. Slocock exhibited the uterus of a deer, which was interesting from the fact the remains of a fœtus were present. He apologised for the condition of the specimen, which he was afraid had not been well preserved. The uterus was taken from a doe which had been injured by the males, receiving a lacerated wound, and which had had to be shot. He learned that it was the custom in the deer world to have no useless females, and that a doe which at rutting time the previous year had not done her duty, and which was not obliging to the gentleman on that occasion, would be ousted from the herd and killed by the stags. That was an interesting feature.

Mr. McIntosh proposed a hearty vote of thanks to Mr. Slocock for the exhibit he had shown, which the Fellows had much appreciated.

Mr. Willett had great pleasure in seconding the vote of thanks. That specimen Mr. Slocock had shown was of a unique character, and quite new to the Society. If properly preserved, the museum might be glad to have it.

The vote of thanks was carried by acclamation.

Election of Fellows.

A ballot was taken for the election of the following :—

Mr. S. C. J. Bennett, B.Sc., M.R.C.V.S. (Royal Veterinary College, Camden Town), and

Captain M. T. Sadler, M.R.C.V.S. (Walpole House, Burton-on-Trent, Staffs).

The President announced that both candidates had been unanimously elected.

Election of Honorary Fellows.

The President said that at a recent council meeting it had been agreed to place before the Fellows of the Society a proposition that the following should be elected Honorary Fellows :—Sir John Bland Sutton, Sir Thomas Clifford Allbutt and Sir d'Arcy Power.

Mr. McIntosh supported the Council's recommendation. The three gentlemen mentioned were very eminent medical men, and had been associated, more or less directly, with the Royal Veterinary College. By honouring them the Society was itself honoured.

The President said that these gentlemen had been proposed by himself, seconded by Major Hobday, and supported by Mr. McIntosh. He put the proposal to the meeting.

The motion was carried unanimously, with acclamation.

The following gentlemen were elected Honorary Fellows at our April meeting, and by an oversight

the names were not published in the minutes of that month :—

Major Douville, Professor of Veterinary Surgery, École Vétérinaire, Lyons, France.

Major Victor Drouin, D.S.O., Inspector-General, Chef des Services Sanitaires au Ministère de l'Agriculture, Rue de Stael 16, Paris.

Professor Dott Antonini, Professore di Chirurgica, Scuola Reale di Medicina Veterinaria, Milano, Italy.

Professor Dott Lanfranchi, Scuola Reale di Medicina Veterinaria, Bologna, Italy.

Dott Provido Sacco, O.B.E., Capo Veterinaria Provinciale del Provincia di Cremona, Cremona, Italy,

M. le Colonel Meulmann, Avenue de la Couronne 159, Bruxelles.

Professor W. L. Williams, Professor of Surgery, Cornell University Veterinary School, Ithaca, U.S.A.

Frederick Torrance, Esq., B.Sc., M.D.V., Veterinary Director-General, Government Buildings, Montreal, Canada.

Dr. C. D. McGilvray, V.S., M.D.V., Principal, Ontario Veterinary College, Toronto, Canada.

Lieut.-Colonel D. S. Tamblyn, Militia Headquarters No. 13, Calgary, Alberta.

Pure Milk Supply.

The President, in calling on Mr. A. Duff Dunbar, of the Public Health Department, L.C.C., said that although Mr. Dunbar was not a Fellow of the Society, he had come forward to give them the benefit of his experience, and he was certain all the Fellows would listen to his paper with the greatest interest. Mr. Dunbar had had unique opportunities of studying his subject, and his experience would be of the greatest value to the Fellows of the Society.

Mr. A. Duff Dunbar then read his paper (published elsewhere in this issue) :—"A Note on My Experience in attempting to safeguard the London Milk Supply from Contamination with Tuberculous Bacilli since 1908; and a Résumé of the Eradication of Bovine Tuberculosis."

Discussion.

Professor Wooldridge, in opening the discussion, said he would like in the first place, to compliment Mr. Dunbar on the results he had obtained, according to his figures, in the enormous reduction of cases of udder tuberculosis amongst the herds which he had to inspect. In that connection, however, there were several questions which he would like to ask. The author referred in the course of his paper, and also in the diagram he had distributed, to tuberculous cows with "open" lesions. He should like to know what was meant by "open tuberculosis."

Mr. Dunbar, interposing, said he referred to cases where bacilli were found in the sputum, or by careful search in the fæces, and in which one could obtain distinct chest indications, apart from the udder.

Professor Wooldridge said that was approximately what was generally understood by "open tuberculosis," *i.e.*, cases of tuberculosis in which the lesions had external communications and from which tubercle bacilli were being eliminated to the exterior. Mr. Dunbar had not given the faintest indication, however, of *how* he determined what were and what were not open cases. The author mentioned that in the course of five years he had 2,223 cases of open tuberculosis, and 3,360 which were not open cases ; but nowhere in the paper was any indication given as to the method by which that was determined. There was very great difficulty in determining what were and what were not open cases—in fact, it was practically impossible, and the term was therefore open to objection. It was known that in advanced cases, where numerous tubercle bacilli were being expelled, either in the sputum or by fæces, or by milk, as Mr. Dunbar had mentioned, there was not much difficulty ; but there were many other cases where bacilli were definitely being expelled, and which were not nearly so easy to detect. Since the steps to be taken depended, according to the author, very largely on whether the tuberculosis was open or not, it seemed to him of primary importance that some other means beyond those ordinarily practicable for establishing which cases were open and which were not must be employed. Mr. Dunbar had not referred at all to the use of tuberculin, but perhaps that was not necessary in such a paper as the one under discussion.

The author made a number of assertions in the beginning of his paper with which he found himself entirely unable to agree. Many of them were repeated later in the paper, and that was especially the case with regard to pasteurisation. Mr. Dunbar said that pasteurisation of milk was "anathema," and he also said that if anybody was under the impression that it destroyed tubercle bacilli they were very greatly mistaken. That view could not be maintained for a moment. If pasteurisation was properly carried out, tubercle bacilli must of necessity be destroyed. If, after an attempt at pasteurisation of milk, it was found that the tubercle bacilli were not destroyed, that was the fault of the individual or his process, which could not be true pasteurisation. That was a very important distinction which ought to be borne in mind.

Mr. Dunbar : I think I used the expression "as ordinarily practised."

Professor Wooldridge said that was so in the first instance, but not later. Pasteurisation did not consist in merely warming milk. It was well known that warming milk often rendered it, as the author had suggested, a beautiful medium for the development of bacilli and bacteria in general ; but if the milk was pasteurised, the tubercle bacilli were all destroyed. It was true that *all* bacteria were not destroyed, because many bacteria or their spores had heat-resisting

power far above the temperature necessary for pasteurisation.

The next point concerning which he found himself in disagreement with the author was with reference to the efficacy of open-air measures as compared with housing. Mr. Dunbar said that open-air treatment contributed to, rather than retarded, the disease. He could not agree with that. Undoubtedly the main predisposing cause of tuberculosis was exposure to infection, and the exposure to infection was far greater if infected animals were housed along with healthy ones than if both were grazing in the open. One quite realised that if an animal was already infected, and was then exposed to inclement external conditions, the reduced vitality which might result would probably materially assist in the development of tuberculosis in the animal in question. It was far more important, however, to prevent infection than to prevent the development of the disease in an animal after infection had taken place. Under those circumstances, open-air treatment was to be advocated rather than condemned. Referring to the examination of milk, Mr. Dunbar said there was no "best time" during milking in which to find bacilli in infected milk. That was an interesting point which he himself had raised on more than one occasion previously, and he thought his experience in the matter had been borne out by that of other men engaged in the examination of suspected and infected udders. His experience was that if the udder was first part milked, then massaged freely, and subsequently milked again, there was in that second milking a far better opportunity of finding the bacilli than would otherwise be the case. That, he thought, would be found of considerable assistance in the examination of fresh milk from the individual cow. The author said that any part of the udder might be affected, and that no part was more susceptible than another; and that was very likely correct. At the same time, his (the speaker's) experience was that the right hind quarter was affected more frequently than any other, and the experience of many inspectors—particularly of Mr. Lloyd, of Sheffield—tended to confirm that view. It was a matter of passing interest only, as one would never confine oneself to the examination of one quarter only. A schedule of cases of udder tuberculosis, showing exactly which quarters were affected, was published by Mr. Lloyd in the *Veterinary Record*, and that list also bore out what he had said.

Again, Mr. Dunbar said that it was a fallacy to consider that milk became infected with tubercle bacilli from manure.

Mr. DUNBAR said he did not mean that. Professor Wooldridge must have misunderstood his remarks on that point.

Professor WOOLDRIDGE, continuing, said that in cases where milk was taken directly from a particular cow for purposes of bacteriological examination that could be guarded against, but for general purposes it must be admitted that milk frequently came in contact with manure, and tubercle bacilli often gained access to the milk from that source in cases where the udder was not infected. The point was: if one found milk from a particular cow infected, and proceeded to examine the milk taken under proper precautions from that particular cow very carefully, and failed to establish the presence of tubercle bacilli, was one to assume it was perfectly safe for human consumption? Personally, he thought not; it did not matter from what source the bacilli had gained entrance, the danger still existed. Although the source was mainly the udder, there were, not infrequently, other points of origin which had to be borne in mind. One had only to proceed to some of the big creameries and there examine the plant after pasteurisation and separation of the cream. The separation was conducted by the large centrifuge in tanks of considerable dimensions, and sometimes he had found the sides of the pan, after the process was completed, covered by a sludge as much as $\frac{1}{4}$in. thick, which, when scraped off and examined, was seen to be green in colour. That sludge consisted mainly of fæcal matter, and of course if any of the animals were infected with intestinal tuberculosis, it was obvious that in all probability that sludge contained tubercle bacilli. That was a case where pasteurisation was helpful. In the cases to which he had referred all the milk was first pasteurised, and then taken off from the pasteuriser into the separator, and the two effluents—cream on the one hand and separated milk on the other—were at once run through refrigerators. Milk and cream so treated must be perfectly safe so long as they were taken in a comparatively fresh condition; both would remain fresh for several days, but not indefinitely. Any infective material was destroyed by the process of pasteurisation, and the quick chilling inhibited the vitality of other organisms which had not already been destroyed by the pasteurisation.

If he understood Mr. Dunbar correctly, he had only power to inspect dairies in cases where tubercle bacilli had already been found in the milk. Certainly his powers ought not to be thus restricted; he ought to have power to go to any dairy from which milk was being sent to the district with which he was concerned, and to examine the cows at any reasonable time; he should have power to examine the milk whether it had been previously suspected of being infected or not.

The author apparently objected to the lofty shed, and thought low ceilings were best. He should like to know what was meant by "low," which was a comparative term. If anything between 12ft. and 14ft.—not more than 14ft.—high was meant, he would be in agreement with him; but if he meant that type of shed in which one had to "duck" in order to avoid braining oneself, he would disagree. A shed more than 14ft. high or 30ft. in full width could not possibly be ventilated properly by any ordinary method, unless the

animals were exposed to uncomfortable and unnecessary draughts.

Mr. DUNBAR: I quite agree.

Professor WOOLDRIDGE said that with regard to the question of compensation, the author favoured not giving any compensation at all. On the merits of the case he was inclined to agree; but he doubted whether it was expedient not to pay compensation, because the work could not be successfully carried out without the hearty co-operation of the farmer, and the farmer would be much more willing to co-operate if he did not have to stand the entire loss. It should not be made worth his while to have tuberculosis; he should not be paid well for having tuberculous cows; but since it was for the public good, the public might with advantage share in the loss entailed. That loss might not be very great, but if it was not very great there could be less objection to sharing it.

He thought all the members owed Mr. Dunbar a vote of thanks for bringing such an unteresting matter before them.

PRACTITIONER'S ESSENTIAL SERVICES.

Mr. W. MCINTOSH wished to thank the author for having brought forward his interesting and important paper on tuberculosis. He thought it would be agreed that it was important to establish public confidence in the wholesomeness of what one supplied—and that was particularly the case with regard to milk. At the same time it was necessary to guard against any contaminating influences which might subsequently affect that product. He thought, however, that tuberculosis could never be stamped out or controlled from a particular centre, from a laboratory, and until the authorities recognised that, and realised that they must co-opt the services of the general practitioner, the desired result would not be attained. In securing the services of the general practitioner, the man who was working hard in the district, faithfully carrying out his work there, and who was daily associated with the animals in that particular district, the authorities would be taking a step in the right direction and attacking the problem at its source. At the present time the inspectors who had to deal with this particular class of work had to deal with it after the infection had occurred. He thought that the first step towards success in dealing with a disease, which was known to be difficult of detection, was to detect it at the earliest stage. To do this, tuberculin must be relied upon to a very large extent, and he was rather surprised the author had not referred to it. It was known that tuberculin was not always reliable, but, taking things as a whole, it was, in his opinion, sufficiently reliable for all practical purposes. He thought it should be made use of at an earlier stage than was customary at the present time. Mr. Dunbar referred to the fact that he obtained very little assistance from the practitioner. Personally, he was not surprised at that. The general practitioner had been studiously avoided by every State Department in existence, and if the authorities saddled the general practitioner with greater responsibility and gave him greater authority, he was satisfied good would result. He was a strong believer in the sound, common-sense judgment of the general practitioner. Until the position of the general practitioner was recognised, tuberculosis would never be suppressed; as it was, its suppression had been talked about during the whole of his professional life, and he did not know whether they were nearer the desired goal now than they were twenty or twenty-five years ago.

Mr. Dunbar mentioned that unless he had reasonable ground for suspecting tuberculosis he had no power to act. He thought that was as it should be; he did not see why a private individual should be interfered with; the power might be abused. From experience it was well known that the "Powers that be" abused the authority that was given to them. Instead of being interfered with, those men should be brought to help in the work, and not provoked into opposition. With that object in view he had consistently maintained, notwithstanding strongly-expressed views to the contrary, that until liberal compensation was paid there would always be obstruction. It was well known that many animals which appeared to be in quite good health were suffering from tuberculosis, and it was not fair and reasonable to call on a farmer to sacrifice, in the interests of the public, an animal which he had bought in good faith. If an animal had to be destroyed in the interests of the public, it should be paid for out of the national exchequer. He believed there were something like 60,000 deaths from tuberculosis annually—60,000 human lives were lost through the neglect and indifference of the State; and if that number could be reduced, at whatever the cost, it was surely worth it. In addition to those who died there were also a number of people who were affected with tuberculosis, and whose lives were consequently made a misery.

Professor EDWARDS said he would first of all like to associate himself with the two previous speakers in thanking Mr. Dunbar for bringing before the Society so interesting a subject. Mr. Dunbar had had, in the course of the last fifteen years or so, an unrivalled experience in combating tuberculosis on a practical scale. Personally, he had come to the meeting that evening expecting to hear a good deal of precise information upon the important problem with which the paper dealt, and he must confess he had been rather surprised. The information given was somewhat diffuse, and the author had lacked precision on some rather important points. The author had presented a chart illustrating the decrease in the incidence of tuberculosis—so-called "open" tuberculosis, and udder tuberculosis—in the course of five years, but he had not explained at any length

the method by which that result was accomplished. He understood that no establishment was visited unless tubercle bacilli were detected in the milk from that source. He would like to know how those tubercle bacilli were detected; whether the milk was examined at the station on arrival. If tubercle bacilli were found to be present, was it then taken that the milk from a certain area was infected? How did Mr. Dunbar manage to alight upon the particular farm that provided the infected milk? He would like to know what Mr. Dunbar's powers were under the L.C.C., and what authority was vested in the veterinary inspectors. Information upon these points was of great importance, because the author made the extraordinarily sanguine statement that if his methods were pursued, tuberculosis would be eradicated from this country in five years. He did not think that opinion was shared by other authorities, and at a recent meeting of the Society, held at the Royal Society of Medicine, Sir John M'Fadyean, who opened the discussion, held a quite different view, and was very pessimistic about the near eradication of tuberculosis from this country.

To be continued.

Notes and News.

Testing of Pit Ponies for Glanders.

The Secretary for Mines is advised by the Ministry of Agriculture that it is very desirable that horses employed in mines should be re-tested for glanders by a qualified veterinary surgeon in manner prescribed by the Board of Trade Order of 1st January, 1921, before they are taken underground again. This applies particularly to horses which have been underground for a long time, but as far as practicable all horses that have not been tested quite recently should be retested.

The opportunity for eliminating any infected horses from the mines is a favourable one now that nearly all the pit ponies are above ground and are not required for work, and Mr. Bridgeman hopes that it will be used by mine owners to the greatest extent possible in the circumstances.—*Mines Department.*

Foot-and-Mouth in the North.

An outbreak of foot-and-mouth disease at a farm at Disley, near Stockport, has been confirmed, and an area covering a radius of 15 miles of Disley has been scheduled. Manchester, Salford, Ashton, Oldham, Stockport, etc., come within the scheduled area.

The Peak district has had a visitation, and the Board of Agriculture issued an order of prohibition over an area of 15 miles from Whaley Bridge. On May 23rd, by order of the authorities, no fewer than 25 cattle, infected and in contact, on a Whaley Bridge farm had to be destroyed.

The Ministry of Agriculture announces that during the past week-end the existence of foot-and-mouth disease has been confirmed on three additional premises in Derbyshire, two of which were at Coombs, Chapel-en-le-Frith, and the third at Youlgrave, Bakewell. This brings the total number of outbreaks confirmed since the present series commenced at Harthill, near Sheffield, on the 18th May last, to eleven.

In the original outbreak at Harthill, one of the affected animals had passed through Marple Market, Cheshire, on the 2nd May, and certain other cattle on the same premises had been purchased at Worksop Market on the 4th May. Of the ten subsequent outbreaks, one occurred at Disley, near Stockport, Cheshire, on the 21st May; two at Whaley Bridge, Derbyshire, confirmed on the 24th and 25th May; six at Chapel-en-le-Frith, Derbyshire, on the 26th, 27th, 28th and 29th May, and one at Bakewell, confirmed on the 28th May.

In all these cases the origin has been due to the transactions of a certain dealer on whose premises one of the outbreaks occurred, and where the disease appears to have been of old standing. This dealer keeps no proper record of his transactions, but animals have been exposed by him at Chapel-en-le-Frith Market, Derbyshire, on the 5th and 19th May, at Macclesfield Market on the 6th May, and at Hayfield on the 12th May. No fewer than four of the outbreaks were in animals which had been exposed in Chapel Market on the 19th instant. It has been found impossible to trace the destinations of all animals which have passed through the hands of the dealer, but as his transactions are believed to have extended to various markets in Cheshire, Derbyshire, and Nottinghamshire, the Ministry has made an Order scheduling these counties, together with Leicestershire and Staffordshire, and the West Riding of Yorkshire.

Men have been working by lamplight all night digging huge pits on three more farms, near Chapel-en-le-Frith, in which to bury scores of fine cattle, some infected, and others in contact with foot-and-mouth disease. The beasts to be slaughtered looked on as their graves were being dug.

Last week hundreds of cattle and pigs were slaughtered worth thousands of pounds.

"An Unfounded Charge."

Under this heading the *Irish Independent* deals as follows with the Ministry's conclusion from the recent discovery of disease in Ireland that it has existed there for weeks.

"The English Ministry of Agriculture eagerly seizes upon the fact that an outbreak of foot-and-mouth disease has been discovered near New Ross to make what amounts to an unfair and unfounded charge against the efficiency of the Irish Department of Agriculture. Because some cattle consigned from New Ross in March and April developed

foot-and-mouth disease several days after they were landed in England, the Ministry jumps to the conclusion that the disease has 'existed in Ireland unreported for many weeks.' This assumption can only be made by ignoring the facts. The Department, following on the first reported cases, sent its inspectors to every possible quarter of infection, and naturally the New Ross area was closely examined. In all, the Department's veterinary inspectors visited 2,000 farms and examined 50,000 animals without finding any trace of the disease. It is impossible from what is known of the course of foot-and-mouth disease that it could have continued to exist undetected for nearly two months. The Department's inspectors are competent and painstaking men, from whom it would be impossible to conceal the evidence of the disease if it existed. Even if they neglected their duty, the disease in that time would have spread over half the country. One might as well say that foot-and-mouth disease has existed unreported in England during the past two years because there have been frequent outbreaks at intervals during that time. When the disease appears in England, as it has again within the past few days, the Ministry is satisfied with restricting the movement of cattle within a radius of fifteen miles of the place of outbreak. But when, as now, the disease appears in Ireland, the whole country is placed under a ban, and only fat cattle for slaughter can be landed at British ports. This is unfair treatment of an important Irish industry."

Common-sense Sale Innovations.

It is stated by the Department of Agriculture and Technical Instruction for Ireland that in recent investigations consequent upon the appearance of foot-and-mouth disease among Irish cattle in Great Britain, considerable difficulties were experienced in tracing the history of these animals back to the farms, and in a number of instances it was found that the buyers of certain cattle were unable to state the names and addresses of the persons from whom they purchased certain animals, as at the time of purchase no record of the transaction in this respect had been kept.

In order that a dislocation of the export live stock trade may, as far as possible, be minimised, it is essential that shippers and owners of live stock should be in a position to inform the Department's officers of the names and addresses of the persons from whom cattle have been purchased. The Department, therefore, suggests that every person purchasing animals should note, at the time of purchase, the name and address of the vendor, together with a brief description of the animals purchased, and subsequently, if the animals are re-sold or consigned to Great Britain for sale, the name and address of the new purchaser or consignee, as the case may be, should be recorded.

Dublin Port's Appeal.

A meeting of the special committee of the Dublin Port and Docks Board appointed to deal with the embargo on live stock has been held.

The accompanying letter was ordered to be sent to the Ministry of Agriculture and Fisheries, London :—

Port and Docks Office, Dublin,
May 23rd, 1921.

Sir,—The Dublin Port and Docks Board regret to observe that the shipment of store cattle from Ireland is again prohibited. Whilst recognising the necessity of taking all desirable precaution to prevent the spread of disease, this Board desire to point out the injurious effect which the prohibition has on the revenues of the port. The Board, in view of the fact that Dublin is situated ninety miles distant from New Ross, at which place the recent outbreak was discovered on two small adjoining farms, and that the Veterinary Department of Agriculture in Ireland have scheduled a district of fifteen miles area around New Ross, are of opinion that, after portal inspection, the export of stores should be permitted from the port of Dublin.

Bearing in mind that in similar outbreaks of the disease in England the trade is allowed to be carried on by order, under conditions imposed outside the infected area, the request of the Dublin Port and Docks Board seems only reasonable.

It is clearly in the interests of the two countries that, as far as possible, with due safeguards, the trade should be allowed to proceed, especially at this season of the year.

We trust this statement of fact will receive careful and favourable consideration by your Ministry.—I am, sir, your obedient servant,

(Signed) E. H. Bailey, *Secretary.*

The Secretary, Ministry of Agriculture and Fisheries, 4 Whitehall Place, London.

"Mystery" Lamb Disease in Northumberland.

The mortality among lambs in certain areas of Northumberland has, says the *Newcastle Daily Journal*, become very serious. In conversation with a flockmaster recently, it was ascertained that the disease is something more than white scour, and, judging by the heavy losses sustained, it has assumed the form of an epidemic. Certain flockmasters have suffered the loss of 60 to 80 lambs this season.

The cause of the disease, which has very swift fatal results, is at present unknown. Investigations are being carried out. The ewes' milk has been analysed, and is found to be all right. The investigators are puzzled, and unless some remedy is found, lamb-rearing in the affected districts in the county will become impossible.

It has been suggested that the land should be given a rest and the sheep stocks cleared out for a few years. Whether the cessation of breeding

for that period will get rid of the disease and allow of successful breeding being restarted is doubtful.

The flockmaster suggested that owing to the prevalence of live stock disease, a joint fund should be opened by the Government and farmers, in order to encourage research work of the most exhaustive character.

Post mortems at the R.V.C., London, yielded the report that no definite cause could be assigned to the severe gastritis and enteritis found, but that a particular bacillus was present in far greater numbers than any other type of organism.

Research Defence Society's Journal.

Seeking public support for the activities of the Research Defence Society, the medical correspondent of the *Times* says: "The fight against disease must be munitioned and supplied with the necessary apparatus. A part of that supply consists of animal experiments. Without these it is a safe conclusion that none of the great conquests of the past generation could have been carried out. Hence he who opposes animal experiments conducted by qualified workers opposes the relief of human suffering.

It is this truth which the Research Defence Society is attempting to bring home to the public, and which has caused it to issue a periodical entitled the *Fight Against Disease*. This journal was instituted in 1913 as a short quarterly report for members and associates only. It is now on general sale, price 6d. It deals in a clear and concise way with recent medical advances which owe their success to experiments on animals.

Let the public realize that at a period even within living memory no surgical operation was unattended by risk of death, and that operations were postponed because the death-rate was so terrible as to constitute a source of fear and horror. Let it realize that the land was continually swept by imported disease, especially plague and cholera. Let it remember that ignorance black as night surrounded nearly every malady—tuberculosis, syphilis, malaria, sleeping sickness, Malta fever, and a host of other tropical diseases. Let it picture the fearful death-rate from smallpox and the still more tragic diphtheria, which often wiped out whole families. Let it recall the appalling numbers of young mothers who died within a few days of their baby's birth. That was our world before the scientist with his animal experiments came on the scene."

Anthrax in the Slaughterhouse.

At Bradford, on May 18th, Abraham Gill, farmer, Milcar Hill Farm, Brierley Lane, was summoned under the Anthrax Order, 1910, for having had in his possession a diseased animal and failing to notify the police with all practicable speed.

It was stated that on March 10th a bull on the defendant's farm was noticed by Gill to be out of sorts, as it had not eaten its food. He gave it some medicine, and as it did not seem to be any better next day he slaughtered it—"in order to have something of its value"—as counsel put it. Defendant sent it to the public slaughterhouse, and on inspection it was found that the meat was unfit for human food, the bull having suffered from anthrax. Two cows on the farm were subsequently taken ill, and both died from anthrax.

Mr. Franklin, who defended, submitted that the defendant was not aware that the animals suffered from anthrax, the symptoms of which disease were very obscure in living animals.

The Stipendiary Magistrate observed that it was the duty of a farmer, immediately one of his animals was ill, to report it to the police.

After hearing the evidence the Stipendiary Magistrate held that the defendant had no reasonable cause to suspect that the animal was suffering from anthrax, and he therefore dismissed the summons.

Correspondence.

Letters to the Editors should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

Examination Standards.

Sirs,—I have read with great interest Mr. Trevor Spencer's election address in which he tells us that "a thorough overhaul of our system of education is needed," though he, unfortunately, follows this with the remark that "we would not be making the best commencement in raising the standard of preliminary education at the present time." His reason apparently is because the greater part of veterinary work is carried out "in the field" where men of a higher education would consider themselves underpaid. But we are assured that the more lucrative posts are becoming increasingly available for those veterinary surgeons whose educational attainments are of the highest, and which justify their consideration equally with medical men for those coveted official appointments which now exist and which are promised in the near future. We are also certain that work "in the field" has been and will be considerably reduced owing to the advent of motor traction—not only cars, omnibuses and lorries, but motor ploughs. For many practitioners ordinary practice is a dead letter, and to obtain these Colonial or Public Health appointments, the ordinary membership diploma will carry one a very little way. Learning and letters are essential nowadays, and *now* is the time to commence raising our standards. It has been opposed by some on the ground that the number of students entering college would diminish. This may or may not be true; but granting the possibility, who would suffer from that, since the class of man entering and leaving would be infinitely superior, and would be much more likely to prove his importance to the community and raise the status of our profession? And, heaven knows, it needs raising. Few practitioners, indeed, complain of being overworked; the reverse, unfortunately, prevails, and certain it is that the demand for work is ever greater than the demand for assistants, so that a few less students per annum would help rather than hinder the profession. Not only am I an advocate of raising the standard of the preliminary examination to an equality with that of the medical exam., but I would like to see a more comprehensive professional curriculum.

As Mr. Livesey very truly remarked recently, little or no attention is paid to the anatomy or diseases of the dog, and a student's sole chance of learning anything thereon

is at the afternoon clinique. There may be some patients or there may not; in any case a student is not greatly missed if he does not attend, and perhaps at the time he does not realise that the dog may be important to him; he has no fixed idea in his mind of specialising, and a large number of students trouble to learn no more than they think they might be examined upon. I was never asked a single question on the dog either in the written or oral, and I think it safe to say that the dog has been much neglected by everyone concerned. In my day there were no lectures on veterinary jurisprudence such as are now available at the Royal (Dick) Veterinary College, and the instruction in meat inspection was really very meagre, as also was that in physical diagnosis.

The whole course undoubtedly wants revising, and I can see no reason for delay. It is a lamentable fact that the status of the R.A.V.C. is below that of the Army Dental Corps—a corps formed only in the last year of the war. Its pay is equal to that of the R.A.M.C. When the reason for this was asked, the reply was a question:—"Is the educational standard of an M.R.C.V.S. on an exact level with that of a medical man or a dentist?"

It is not? And so we remain ever relegated to the background, officially and socially, and so necessarily financially.—Yours, etc., HAMILTON KIRK, Capt., R.A.V.C., T.F.

67 Wigmore Street, W.1, May 27th, 1921.

The Docking of Horses Bill.

Sirs,—I note from reports in *The Horse and Hound* and the *Record* that the Docking of Horses Bill is withdrawn.

I understand that the Bill was withdrawn because of pressure brought to bear from the Shire Horse Society, and from agriculturists, and I may say I have read from members of the profession. Personally, although I often perform the operation and sometimes on my own animals, I consider it a useless and barbarous performance.

From my own experience of colt-breaking, and driving, I have found a docked horse with an untrimmed tail more liable to throw his tail over the reins than an undocked horse, and that a docked horse will hold them in, or, in other words, squeeze his tail in tighter than an undocked animal, when he feels something strange under his dock.

As an example, I bred, broke and sold a cob without docking him. I afterwards docked him for the buyer, and subsequently bought him back.

The man who bought the cob taught him to start the second he put his foot on the step, in consequence I always have the reins in my hand when getting into my gig. I have twice had the near side rein under his tail because of this habit.

I may also say the cob is worse to put on the crupper. This is not my only experience, and I think it up to the profession to put down a practice that afterwards only brings in a very poor mess of pottage.—Yours faithfully, JAMES M. BROWN.

Forest Farm, Pontypridd, May 24th, 1921.

Lord Willoughby de Broke's Letter.

Sirs,—I enclose a copy of a letter I sent to the editor of the *Times* the same day as the leading article on veterinary science and Lord Willoughby de Broke's letter appeared. I wrote at once, as I was very indignant and was afraid the statements made would not be challenged promptly. However, I was very pleased to find our most excellent secretary, Mr. Bullock, had at the same time taken the matter up, and very ably too.

I do think the misstatements and the slur cast on the profession demand some sort of an apology, and I have forwarded this to you in the hope it may prevent the matter from being allowed to drop.—I am, yours faithfully, WM. ASCOTT.

18 Buttgarden Street, Bideford, May 24th, 1921.

[Major Ascott's letter to the *Times* appears elsewhere in this issue.—ED.]

The Headless I.C.V.D.

Sirs,—The letter signed by "Veritas" in your issue of March 12th last is likely to cause satisfaction in the minds of reactionaries both inside and outside the profession, if it is left entirely unchallenged.

Your correspondent is obviously of a political turn of mind, as it is clear that he regards policy of paramount importance. I trust I may be allowed to correct an important mis-statement in "Veritas'" letter.

The Indian Civil Veterinary Department has not been split up into ten different departments. It is still an Imperial Department, the officers of which are recruited by the Secretary of State.

As far as I am aware it is the only Imperial department in India that has no head.

If it is considered necessary for the medical, agricultural, forest, zoological, geological, botanical and other departments to have their own technical heads, why not the veterinary department?

The Indian Civil Veterinary Department has made little progress since the head of the department was abolished, and it is not likely to make more if the narrow views of politicians such as "Veritas" are to prevail.

High officials of the Government of India admit the necessity of having an adviser in veterinary matters. At present the anomaly exists of the required advice being obtained from the agricultural adviser, who has no qualifications.

The duties, if properly carried out, of the head of the Civil Veterinary Department would necessitate an officer's whole time being devoted to them, and these duties could only be performed by a veterinary officer, who would spend a lot of his time travelling round the various provinces, and consulting the different authorities.

He should have had experience and his opinion should carry weight.

It is in this way only that the Civil Veterinary Department can be co-ordinated, the combined opinion of professional and departmental matters discussed, and progress made throughout the department.

"VIS UNITA FORTIOR."

Vaccine Distribution Controversy.

Sirs,—The tone of the letter inserted by Mr. Horace L. Roberts in a recent issue of the *Record*, condemning the action of the Council of the N.V.M.A., is regrettable, and its text calls at once for correction. He obviously has not in mind the sequence of events which led up to Sir J. McFadyean's resignation. The original circular sent out, it seems with the latter's full approval, distinctly states ". . . the vaccine will be supplied gratis during the ensuing foaling season to any member of the" (Shire Horse) "Society applying for it. . . . Applications for the vaccine should be addressed to the Principal . . . Full particulars with regard to the employment of the vaccine will be forwarded with it. . . . A veterinary surgeon must be employed to inject it."

What may have been the subsequent practice of the "Principal" does not matter. It is the wording of the original publication circularised among a group of laymen, implying as it does that veterinary surgeons were to be called upon merely "to inject" a product obtainable from another of their profession, that undoubtedly and rightly called for action on the part of the council. If the council erred in their action, then from an ordinary practitioner's point of view it was on the side of leniency, and he naturally asks himself in what light he would be regarded if he adopted the above procedure in order to put on trial any lines of treatment which might suggest themselves to him in the course of his daily practice.

To explain away the intentions of an individual who has attained power and condemn the action of organised bodies who are struggling hard to enhance the status of the practitioner is a form of servility or "toadying" which must be quickly suppressed if we are to maintain our position as a self-respecting body.—Yours faithfully "AN ORDINARY PRACTITIONER."

May 11th, 1921.

The Colliery Strike.

Sirs,—As the horses all over the country have been brought out of the collieries and have been grazing and, in many cases, have been lent to farmers and others, thereby being mixed up with other horses, ought they to be re-malleined before going underground when the strike is settled? What is the law on the point?—Yours, etc., "ENQUIRER."

May 19th, 1921.

[See Ministerial pronouncement in this issue.—ED.]

Salaries—Ministry of Agriculture.

Sirs,—An advertisement appeared in to-day's *Times* for a veterinary inspector under the Export Horses Act, whole-time appointment at the munificent salary of £300 per annum, no bonus. Croydon is advertising for a district sanitary inspector at a salary of £320 per annum, with prospects. Street sweepers in the town in which I reside receive £4 per week. Cost of living is stated to be 128 per cent. over 1914. Where are the much-lauded prospects?—Yours, etc., "HOPEFUL."

May 21st, 1921.

Calf Weight at Birth.

Sirs,—Can anyone inform me what is the record weight of a calf at birth?

I was called to calve a cow early this morning, and found head presented, both forelegs right back; did not have much difficulty in getting the legs up, and delivered calf fairly easily. The calf was dead when I arrived, but being struck with its size, the owner and myself weighed it, and found it a little over 125lbs.

I see Smith's *Hygiene* gives the average weight at 77lbs. and Fleming's *Obstetrics* 74¾lbs., so thought this almost worth recording. The cow was pure Shorthorn.—J. R. BAXTER.

Downington House, Lechlade, Glos., May 22nd, 1921.

Army Veterinary Service.

THE LONDON GAZETTE, WAR OFFICE, REGULAR FORCES.

May 20th.—The following temporary captains relinquish their commissions on completion of service, and retain rank of Capt.:—W. R. Kennedy (June 5th, 1919); W. S. MacKintosh (March 2nd); J. Richardson (March 11th).

May 27th.—Capt. J. Harrison to be Major (May 12th).

May 27th.—Major B. L. Lake, D.S.O., O.B.E., relinquishes the acting rank of Lt.-Col. on ceasing to hold the appointment of A.D.V.S. (April 9th). Temp. Captain G. Sutton, F.R.C.V.S., relinquishes his command on completion of service (March 25th, 1919), and is granted the rank of Major.

May 27th.—Captain H. D. Sparrow resigns his command (May 28th), and retains rank of Captain.

Captain R. Isherwood (late R.A.V.C.) to be Captain, with precedence as from August 31st, 1915 (May 18th).

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No	No.	No.	No.	No.	No.
Week ended 21st May, 1921 ...	...	...	9	10	1	20	...	—	22	25	6	27	6
Corresponding Week in 1920		...	3	4	...	...	...	...	53	71	2	50	21
Corresponding Week in 1919	3	...	8	10	...	...	5	5	92	146	1	60	29
Corresponding Week in 1918	...	...	4	5	...	...	...	...	75	153	4	36	13
Total for 21 weeks, 1921 ...	19	1	253	298	29	2689	5	8	1323	2057	372	516	155
Corresponding period in 1920	4	...	203	240	42	2432	9	16	2366	4070	281	954	334
Corresponding period in 1919	88	3	85	115	19	1033	11	35	2978	5807	212	658	253
Corresponding period in 1918	...	...	128	144	...	...	14	38	2560	4924	233	495	167
IRELAND.									Outbreaks				
Week ended 21st May, 1921 ...	...	...	...	...	2	5	...	...	...	1	6	27	
Corresponding Week in 1920 ...	...	...	...	...	...	...	...	...	1	1	...	...	
Corresponding Week in 1919 ...	...	...	...	...	...	...	...	...	2	5	2	2	
Corresponding Week in 1918 ...	...	...	...	...	...	...	...	...	2	1	...	...	
Total for 21 weeks, 1921	...	...	4	46	...	...	41	131	31	195			
Corresponding period in 1920 ...	1	1	...	...	1	3	65	145	4	16			
Corresponding period in 1919 ...	...	...	...	...	1	1	61	150	18	59			
Corresponding period in 1918 ...	1	1	...	...	...	...	67	164	7	27			

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

NOTE.—The figures for the current year are approximate only.

Department of Agriculture and Technical Instruction for Ireland (Veterinary Branch), Dublin, 23rd May, 1921.